WALSH ENGINEERING & SURVEYING, INC.

STORMWATER MANAGEMENT PLAN

for

Montemar Estates
APN 504-242-41

TM 5316

Lawrence W. Walsh 11/3/03

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INTRODUCTION

The Storm water Management Plan (SWMP) is a requirement of the County of San Diego under its Watershed Protection, Stormwater Management, and Discharge Control Ordinance (section 67.817). The purpose of this SWMP is to address the water quality impacts from the proposed Montemar Estates subdivision. Best Management Practices (BMPs) will be implemented to mitigate potential water quality impacts from the development of this project. This SWMP is also intended to provide proper long-term BMP maintenance guidelines based on fiscal planning to ensure their effectiveness. The engineer will revise this SWMP throughout the life of the project as necessary.

1.0 PROJECT DESCRIPTION

The proposed Montemar Estates subdivision encompasses approximately 7 acres in the County of San Diego, community of Spring Valley. The project site is located Easterly of Montemar Drive 230 feet South of Austin Drive (see Attachment A). Land use for the 13-lot subdivision is rural-residential with a minimum lot size of 0.5 acres.

1.1. Topography and Land Use

In its existing condition, the site is characterized by rolling hills, approximately 100 percent of which is vacant. There is one paved road, Montemar Drive, which parallels the northwesterly project boundary, which will remain and act as project access. Several existing homes surround the project.

1.2. Hydrologic Unit Contribution

The Montemar Estates Subdivision is located in the Sweetwater Hydrologic Unit (909.00), Middle Sweetwater Hydrologic Area (909.20), and Jamacha Hydrologic Sub-Area (909.21). The project drains southerly to an unnamed swale and ultimately to the Sweetwater River, which is located approximately two and a half miles from the project boundary.

The estimated total drainage area to the Sweetwater River downstream of the confluence with the unnamed swale is 160 square miles (102,400 acres) and the estimated total drainage area from the proposed subdivision is 42 acres. This project represents much less than 0.1% of the total contributing watershed area and the total 100-year storm peak discharge at this point in the Sweetwater River.

The proposed project will not significantly alter the onsite drainage patterns and will not divert storm runoff from its existing watershed. Storm runoff from proposed street areas will be conveyed rapidly to inlets, a drainage system with rip rap energy dissipater upon all storm drain exits then to onsite vegetated swales and will flow relatively shallow within the swales. Storm runoff from the

residential lots will be conveyed slowly overland through landscaped areas then to the vegetated swales. Runoff velocities within the existing natural swale will not be significantly impacted by the proposed project.

2.0 WATER QUALITY ENVIRONMENT

2.1 Beneficial Uses

The potential beneficial uses are defined as follows:

MUN – Municipal and Domestic Supply: Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR – Agricultural Supply: Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for ranch grazing.
IND – Industrial Services Supply: Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
REC1 – Contact Recreation: Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing and the use of natural hot springs.
REC2 – Non-Contact Recreation: Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
PROC – Industrial Process Supply: Includes uses of water for industrial activities that depend primarily on water quality.
WARM – Warm Freshwater Habitat: Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.
WILD – Wildlife Habitat: Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g. mammals birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

2.1.1 Inland Surface Waters

The inland surface waters beneficial uses for the Jamacha Hydrologic Sub Area (909.21) are presented in Table 1 as presented in the Water Quality Control Plan for the San Diego Basin.

TABLE 1

HYDROLOGIC UNIT NUMBER	MUN	AGR	IND	PROC	REC1	REC2	WARM	WILD
909.21	x	x	x	x	x	x	x	x

+Excepted from MUN
x Existing Beneficial Use
0 Potential Beneficial Use

2.1.2 Ground Water

The ground water beneficial uses for Middle Sweetwater Hydrologic Area (909.20) are presented in Table 2 as presented in the Water Quality Control Plan for the San Diego Basin.

TABLE 2

HYDROLOGIC UNIT NUMBER	MUN	AGR	IND	PROC	REC1	REC2	WARM	WILD
909.20	x	x	x					

*Excepted from specific Beneficial Use
x Existing Beneficial Use
0 Potential Beneficial Use

2.1.3 Reservoirs and Lakes

The Reservoirs and Lakes beneficial uses for Sweetwater Reservoir (909.21) are presented in Table 3 as presented in the Water Quality Control Plan for the San Diego Basin.

TABLE 3

HYDROLOGIC UNIT NUMBER	MUN	AGR	IND	PROC	REC1	REC2	WARM	WILD
909.21	x	x	x	x	x	x	x	x

*Excepted from specific Beneficial Use
x Existing Beneficial Use
0 Potential Beneficial Use

3.0 CHARACTERIZATION OF PROJECT RUNOFF

3.1 Existing and Post-Construction Drainage

According to the California 2002 303d list published by the San Diego County Regional Water Quality Control Board, there are no impaired waterbodies associated with this project.

- The project location and watersheds have been compared to the current published 303d list of impaired water bodies and the nearest impaired water body is the San Diego Bay, impaired by High Coliform Count @ HSA 909.11 (Telegraph Canyon).

- The estimated 100-year storm peak discharges for the existing and proposed conditions of the watershed, which encompass the site, were determined using criteria set forth in the 2003 County of San Diego Hydrology Manual. The criteria as presented in the County's manual for calculating the storm peak discharges from the project site indicate that the runoff coefficient for the existing and proposed conditions are virtually the same. Therefore, the total storm peak flows from the project site in the existing and the proposed condition remain generally unchanged. The hydrologic calculations and references are included in the "**CEQA PRELIMINARY DRAINAGE STUDY**" for "**Montemar Estates - TM 5316**" dated **10-24-03**, prepared by Walsh Engineering and Surveying, Inc. The estimated 100-year storm peak discharges are presented in Table 4.

TABLE 4: 100-YEAR STORM EVENT

	EXISTING CONDITION		PROPOSED CONDITION	
DRAINAGE BASIN NO.	DRAINAGE BASIN AREA (AC.)	Q (CFS)	DRAINAGE BASIN AREA (AC.)	Q (CFS)
A	41.6	54.8	41.6	55.2

The onsite runoff volumes for the water quality design storm (85th Percentile) are presented in Table 5.

TABLE 5: 85th PERCENTILE STORM

BASIN	BASIN AREA (Acres)	Q (CFS)	DISCHARGE POINT
A	41.6	12.6	Onsite Vegetated Swales to Unnamed Swale

The weighted runoff coefficient used for both the existing and proposed conditions is shown in the **CEQA Preliminary Drainage Study**, for residential-rural (lots greater than 0.5 acres) land uses, as presented in the County of San Diego Hydrology Manual. Theoretically, the development of any site will cause an increase in runoff. However, the potential increase in runoff attributed to this development is negligible because the runoff coefficient and characteristics will not be significantly altered. In addition, storm runoff from the proposed paved street areas will flow rapidly in the pavement and will typically peak and pass sooner than the overland surface runoff from the residential pads and landscaped areas. Therefore, there are no increased storm peak discharges attributed to this proposed development.

3.2 Post Construction Expected Discharges

There is no sampling data available for the existing site condition. In addition, the project is not expected to generate significant amounts of non-visible pollutants. However, the constituents who are commonly found on single-family residential developments and streets are presented in Table 6.

TABLE 6

Pollutants from the Project Area

	General Pollutant Categories								
Priority Project Categories	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Developm	X	X			X	X	X	X	X
Attached Residential Developm	X	X			X	P(1)	P(2)	P	X
Commercial Developm	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurant					X	X	X	X	
Hillside Developm ent	X	X			X	X	X		X
Parking	P(1)	P(1)	X		X	P(1)	X		P(1)
Streets, Highways &	X	P(1)	X	X(4)	X	P(5)	X		
Retail Gas			X	X(4)	X		X		

X = anticipated
P = potential
(1) A potential pollutant if landscaping exists on-site.
(2) A potential pollutant if the project includes uncovered parking areas.
(3) A potential pollutant if land use involves food or animal waste products.
(4) Including petroleum hydrocarbons.
(5) Including solvents.

3.3 Soil Characteristics

The project area consists of hydrologic soil group types "B" and "D".

Soil group Type "B" is described as having a moderate runoff potential. These soils have a moderate infiltration rates when thoroughly wetted and consist primarily of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures.

Soil group Type "D" is described as having a very slow infiltration rate when thoroughly wetted, consisting chiefly of clay soils with a high swelling potential, soils with a high permanent water table, soils with a clay pan or clay layer at or near the surface and shallow soils over nearly impervious materials. These soils have a very slow rate of transmission.

The Hydrologic Soil Groups – runoff potential Map is included as Attachment D in the Attachment section of this SWMP.

4.0 MITIGATION MEASURES TO PROTECT WATER QUALITY

BMPs will be implemented during construction and in the post-construction period to minimize impacts to water quality.

4.1 Construction BMPs

Construction BMPs include riprap energy dissipators, storm drain inlet protection, silt fence, gravel bags, brow ditches, bonded fiber matrix (BFM) slope protection, hydraulic stabilization and stabilized construction entrances. In addition, the contractor will be responsible for implementing temporary BMPs such as stockpile management, solid waste management, dewatering operations, vehicle and equipment maintenance, material delivery and storage, spill prevention and control, concrete waste management, water conservation practices, paving and grinding operations.

Permanent revegetation of all disturbed uncovered areas will also be implemented.

4.2 Post-construction BMP's

Pollutants of concern as noted in Section 3.2: Post Construction Expected Discharges will be addressed through three types of BMPs. These types of BMPs are site design, source control and treatment control.

4.2.1 Site Design BMPs

The project is designed to minimize the use of impervious areas. Streets are designed to meet the County of San Diego's minimum width criteria and multiple access points are provided through the use of cul-de-sacs, thereby reducing the lengths of the streets. The streets will have a paved width of 32-feet; on-street parking is allowed. To the maximum extent practicable, future driveways will be designed to drain to landscaped areas to promote pollutant removal prior to discharging to the vegetated swales.

There are proposed underground storm water conduits for pad drainage and culvert under-crossings. Riprap energy dissipators will be located at all storm drain and spillway outfalls. No culverts, rip rap energy dissipators, storm drain facilities, landscaping or stormwater facilities will be located within the proposed biological open space areas (see Attachment C).

The proposed vegetated swales on lots 7 and 9 will connect to the existing naturally vegetated swale in the southeast corner of the project (see Attachment C). These swales within the project boundary will facilitate overland flow and provide filtration and infiltration for storm runoff.

The proposed single-family residences will be setback from the impervious streets to provide opportunities to drain rooftops into landscaped areas, thereby minimizing the directly connected impervious areas. The increased impervious areas will be minimized to the maximum extend practicable for single-family developments. As soon as cuts or embankments are completed, all slopes will be stabilized with a hydromulch mixture, or an equivalent protection measure.

4.2.2 Source Control BMPs

Source control BMPs will be emphasized through homeowner education and implementation. Homeowners will be provided with pamphlets and publications (e.g. "Stormwater Runoff Pollution Prevention Tips for Homeowners") at the time of purchase. The "Stormwater Runoff Pollution Prevention Tips for Homeowners" pamphlet provides guidelines for homeowners to reduce oil, grease and organic compounds through car care maintenance, reduce sediments and nutrients through proper yard care and maintenance, reduce pesticides and oxygen demanding substances in the home and reduce trash, debris and bacteria and viruses through proper litter and pet waste removal. The pamphlet identifies the sources of stormwater pollution and provides methods and procedures by which the homeowner can alleviate these pollutants.

Homeowners will also be responsible for keeping their driveways swept and for debris removal. Trashcans are to be covered.

4.2.3 Treatment control BMPs

The proposed project is comprised of rural residential homes with minimum lot sizes of 0.5 acres. With the exception of the access roads and residential pads, the majority of the existing vegetation will be preserved. Storm runoff from the access roads will surface flow to proposed spillways or inlets. Storm runoff will be conveyed under the access roads via culvert. Riprap energy dissipators will be located at the outfalls of the proposed spillways and at the culvert undercrossings to provide runoff velocity reduction. Street runoff will then be routed overland through landscaped and vegetated areas prior to entering the vegetated swales.

Roof drains on all homes to be constructed will deposit into landscaped areas and the runoff will flow overland through the landscaping prior to entering the vegetated swales. Recognizing that pollutants from all onsite runoff from the lots will have been adequately filtered through the landscape and the natural swales, potential pollutants will be minimal. In addition, the approximately 80% of the site is characterized by Hydrologic Soil Group Types "B" which will naturally promote infiltration.

Runoff from the public streets will be deposited into vegetated swales on lots 7 and 9. The vegetated swales, which utilize both soil and plants to remove storm water pollutants, will slow the runoff velocity and distribute the runoff through the vegetation to remove pollutants and minimize erosion. This bio-filtration will alleviate environmental impacts.

Velocities in the vegetated swales are estimated to be relatively slow and will thereby promote the settling or filtering out of pollutants. Biofiltration and infiltration are very efficient treatment control BMPs (see Attachment I: Enhanced Treatment Control BMP Selection Matrix in the Attachment Section of this SWMP).

The storm runoff from the project will be sufficiently filtered through landscaping, vegetated swales and the natural swale. The long configuration of the swales together with the vegetation will promote pollutant removal and reduce erosion. Therefore, the bio-filtration areas and vegetated swales will be adequate to filter the design storm runoff and to offset the effect of the typical increase in impermeable surface area common with development. Placements of the BMPs are noted on the Post Construction BMP Plan (Attachment C).

5.0 OPERATION AND MAINTENANCE PROGRAM

After construction is complete and lots are sold, the new lot owners will assume the responsibility for maintenance of the private facilities. The designated responsible party

may be the lot owners or an association of property owners whose fiscal resources are drawn from private funds or association fees. See attachment G for Estimated and Operational Costs for BMP's.

The operation and maintenance requirements for specific BMPs are as follows:

5.1 Bio-Filters

The operational and maintenance needs of a bio-filter or vegetated swale are:

- Vegetation management to maintain adequate hydraulic functioning and to limit habitat for disease-carrying animals.
- Animal and vector control.
- Periodic sediment removal to optimize performance.
- Trash and debris to prevent obstruction of a Swale.
- Removal of standing water, which may contribute to the development of aquatic plant communities or mosquito breeding areas.
- Erosion and structural maintenance to prevent the loss of soil and maintain the performance of the Swale.

5.1.1 Inspection Frequency

The facility will be inspected and inspection visits will be completely documented:

- Once a month at a minimum.
- After every large storm (after every storm monitored or those storms with more than 0.50 inch of precipitation.)
- On a weekly basis during extended periods of wet weather.

5.1.2 Aesthetic and Functional Maintenance

Functional maintenance is important for performance and safety reasons.

The following activities will be included in the aesthetic and functional maintenance program:

- Trash Removal. Removing trash will be done on the Swale, around fences, at the inlet and outlet structures.
- Weed Control. Large weeds will be removed through mechanical means. Herbicide will not be used because these chemicals may impact the water quality monitoring.

Functional maintenance has two components: Preventive maintenance and Corrective maintenance

Preventive Maintenance:

Preventive maintenance activities to be instituted at a Swale are:

- Trash and Debris. During each inspection and maintenance visit to the site, debris and trash removal will be conducted to reduce the potential for inlet and outlet structures and other components from becoming clogged and inoperable during storm events.
- Sediment Removal. Sediment accumulation, as part of the operation and maintenance program at a Swale, will be monitored once a month during the dry season, after every large storm (0.50 inch), and monthly during the wet season. Specifically, if sediment reaches a level at or near plant height, or could interfere with flow or operation, the sediment will be removed. If accumulation of debris or sediment is determined to be the cause of decline in design performance, prompt action (i.e., within ten working days) will be taken to restore the Swale to design performance standards. Actions will include using additional fill and vegetation and/or removing accumulated sediment to correct channeling or ponding. Characterization and Appropriate disposal of sediment will comply with applicable local, county, state, or federal requirements. The swale will be regraded, if the flow gradient has changed, and then replanted with sod.
- Removal of Standing Water. Standing water must be removed if it contributes to the development of aquatic plant communities or mosquito breeding areas.
- Fertilization and Irrigation. The vegetation seed mix will be designed so that fertilization and irrigation is not necessary. Fertilizers and irrigation will not be used to maintain the vegetation.
- Elimination of Mosquito Breeding Habitats. The most effective mosquito control program is one that eliminates potential breeding habitats.

Corrective Maintenance:

Corrective maintenance is required on an emergency or non-routine basis to correct problems and to restore the intended operation and safe function of a Swale. Corrective maintenance activities include:

- Removal of Debris and Sediment. Sediment, debris, and trash, which impede the hydraulic functioning of a Swale and prevent vegetative growth, will be removed and properly disposed. Temporary arrangements will be made for handling the sediments until a permanent arrangement is made. Vegetation will be re-established after sediment removal.
- Erosion Repair. Where a reseeding program has been ineffective, or where other factors have created erosive conditions (i.e., pedestrian traffic, concentrated flow, etc.), corrective steps will be taken to prevent loss of soil and any subsequent danger to the performance of a Swale. There are a number of corrective actions than can be taken. These include erosion control blankets, riprap, sodding, or reduced flow through the area. Designers or contractors will be consulted to address erosion problems if the solution is not evident.
- Elimination of Animal Burrows. Animal burrows will be filled and steps taken to remove the animals if burrowing problems continue to occur

(filling and compacting). If the problem persists, vector control specialists will be consulted regarding removal steps. This consulting is necessary as the threat of rabies in some areas may necessitate the animals being destroyed rather than relocated. If the BMP performance is affected, abatement will begin. Otherwise, abatement will be performed annually in September.

5.1.3 General Facility Maintenance.

In addition to the above elements of corrective maintenance, general corrective maintenance will address the overall facility and its associated components. If corrective maintenance is being done to one component, other components will be inspected to see if maintenance is needed.

Maintenance Frequency

The maintenance indicator document, included as Attachment E, lists the schedule of maintenance activities to be implemented at a swale.

Debris and Sediment Disposal

Waste generated in the swales is ultimately the responsibility of Montemar Estates. Disposal of sediment, debris, and trash will comply with applicable local, county, state, and federal waste control programs.

Hazardous Waste

Suspected hazardous wastes will be analyzed to determine disposal options. Hazardous wastes generated onsite will be handled and disposed of according to applicable local, state, and federal regulations. A solid or liquid waste is considered a hazardous waste if it exceeds the criteria listed in the CCR, Title 22, Article 11.

The vegetation in the natural swales is expected to provide adequate bio-filtration. The advantage of the existing vegetation is that there is no maintenance required. The vegetation is already established, so it does not require regular watering. Intermittent off-season runoff will promote its viability.

5.2 Energy Dissipaters

The operational and maintenance requirements for riprap energy dissipators are as follows:

- Periodic inspection to assess the stability and performance of the energy dissipators and inlet aprons.
- Replacement of any rock outlet protection that has been washed away by large storms when necessary so the area is not susceptible to erosion.

Maintenance Frequency

The maintenance indicator document, included as Attachment E, lists the schedule of maintenance activities to be implemented at each energy dissipater.

6.0 FISCAL RESOURCES

The project owner is required to arrange for the maintenance and inspection of all private BMPs after construction is complete. After construction is complete and lots are sold, the new lot owners will assume the responsibility for maintenance of the private facilities. The designated responsible party may be the lot owners or an association of property owners whose fiscal resources are drawn from private funds or association fees.

The approval of the Tentative Map may be conditioned to require that, prior to the approval of a Final or Parcel Map, the subdivider shall provide evidence that the subdivider has requested the California Department of Real Estate to include in the public report to be issued for the sale of lots, a notification regarding the maintenance requirements. There is no funding required for this condition.

A Maintenance Agreement can also include access and maintenance provisions for the vegetated swales and bio-filtration areas. The vegetated swales and bio-filtration areas will function as a filtering medium to effectively remove pollutants from the runoff including hydrocarbons, heavy metals, silt, debris, litter and vegetation.

A Stormwater Maintenance Program (SMP) for the long-term maintenance of the post-construction BMPs will be established in accordance with the County of San Diego Post-Construction BMP Categories. Setting the single-family residences back from the street and draining rooftops into landscaped areas is considered a Category One BMP because the property owners will be expected to routinely maintain their landscape as incidental to taking care of their property. The proposed vegetated swales are also considered Category One BMPs because the nature of these proposed BMPs indicate that it is appropriate for the property owners to be given the responsibility.

The County should have only minimal concern for ongoing maintenance. The proposed BMPs inherently "take care of themselves", or property owners can naturally be expected to do so as an incident of taking care of their property. Therefore, the BMPs for Montemar Estates are categorized as Category 1 and no funding is required for this category.

Mechanisms to assure maintenance of BMPs include the following:

1. Stormwater Ordinance Requirement: The County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (S.O.) require this ongoing maintenance. In the event that the mechanisms below prove ineffective, or in addition to

enforcing those mechanisms, civil action, criminal action or administrative citation could also be pursued for violations of the ordinance.

2. Public Nuisance Abatement: Under the S.O. failure to maintain a BMP would constitute a public nuisance, which may be abated under the Uniform Public Nuisance Abatement Procedure. This provides an enforcement mechanism additional to the above, and would allow costs of maintenance to be billed to the owner, a lien placed on the property, and the tax collection process to be used.

3. Notice to Purchasers. Section 67.819(e) of the SO requires developers to provide clear written notification to persons acquiring land upon which a BMP is located, or others assuming a BMP maintenance obligation, of the maintenance duty.

4. Conditions in Ongoing Land Use Permits: For those applications (listed in SO Section 67.804) upon whose approval ongoing conditions may be imposed, a condition will be added which requires the owner of the land upon which the stormwater facility is located to maintain that facility in accordance with the requirements specified in the SMP. Failure to perform maintenance may then be addressed as a violation of the permit, under the ordinance governing that permit process.

5. Subdivision Public Report: Tentative Map and Tentative Parcel Map approvals will be conditioned to require that, prior to approval of a Final or Parcel Map, the subdivider shall provide evidence to the Director of Public Works, that the subdivider has requested the California Department of Real Estate to include in the public report to be issued for the sales of lots within the subdivision, a notification regarding the maintenance requirement. (The requirement for this condition would not be applicable to subdivisions which are exempt from regulation under the Subdivided Lands Act, or for which no public report will be issued.)

7.0 CONCLUSIONS

The potential pollutants associated with detached residential developments are presented in Table 6 in Section 3.2 of this SWMP. ATTACHMENT I: Enhanced Treatment Control BMP Selection Matrix located in the Reference Section of this SWMP indicates that biofilters and filtration are effective BMPs for the removal of anticipated pollutants from detached residential developments. Therefore, there are no anticipated impacts to the beneficial uses of the Jamacha Hydrologic Sub-Area (909.21) attributed to this proposed development. A summary of the facts and findings associated with this project and the measures addressed by this SWMP is as follows:

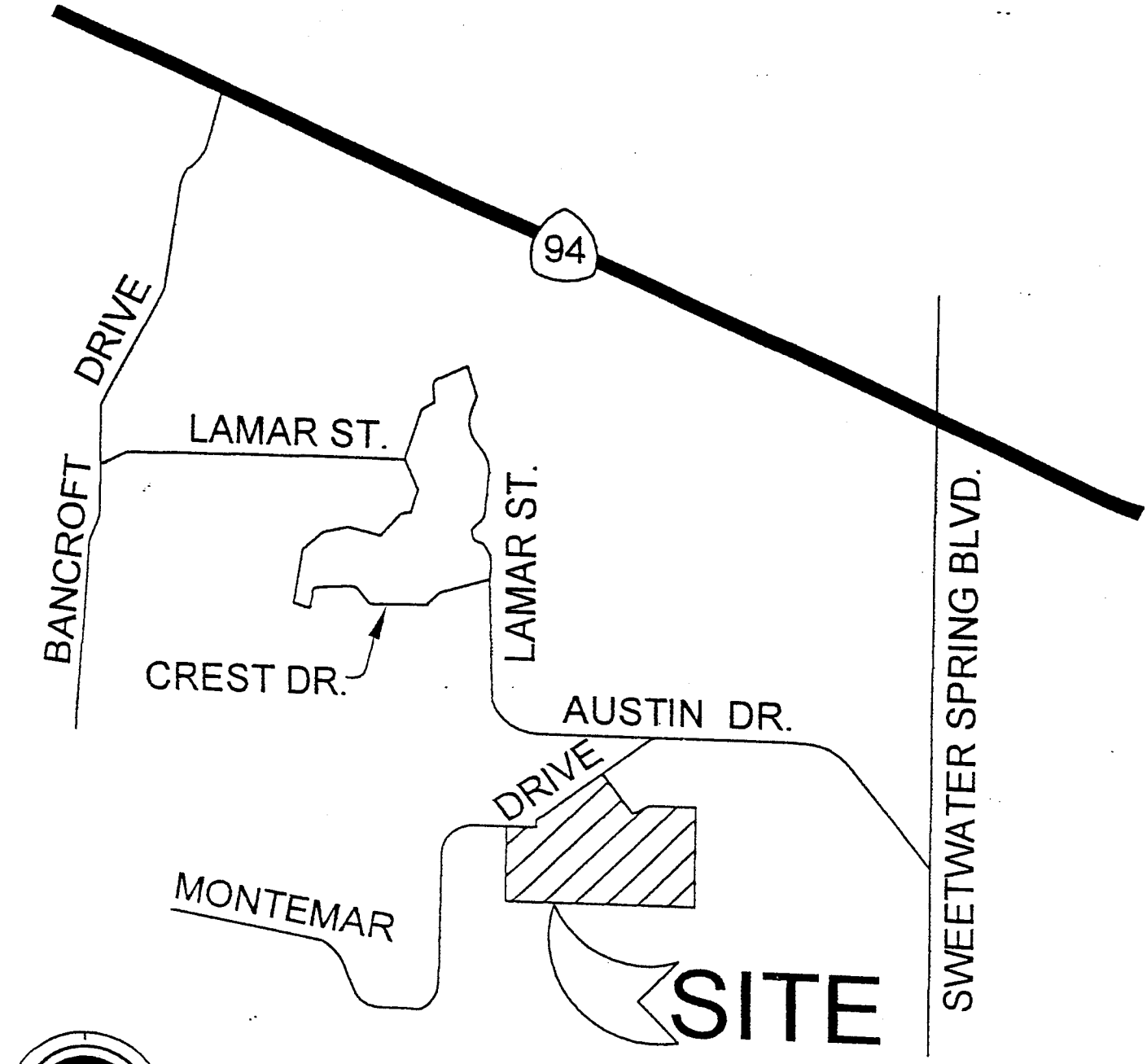
- The beneficial uses for the receiving waters have been identified. None of these beneficial uses will be impaired or diminish due to the construction and operation of this project.
- The Montemar Drive project will not significantly alter drainage patterns on the site. The discharge points will not be changed and riprap energy dissipaters will be placed to attenuate the flow velocities, thus preventing downstream erosion.

- The vegetated swales as a part of the project will provide mitigation of the potential pollutants by providing opportunities for filtration and infiltration.
- The proposed construction and post-construction BMPs address mitigation measures to protect water quality and protection of water quality objectives and beneficial uses to the maximum extent practicable.

The combination of proposed construction and post-construction BMPs will reduce, to the maximum extent practicable, the expected pollutants and will not adversely impact the beneficial uses or water quality of the receiving waters.

8.0 REFERENCES

1. County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (S.O.)



VICINITY MAP

NO SCALE

THOMAS BRO MAP NO. 1271, C–7

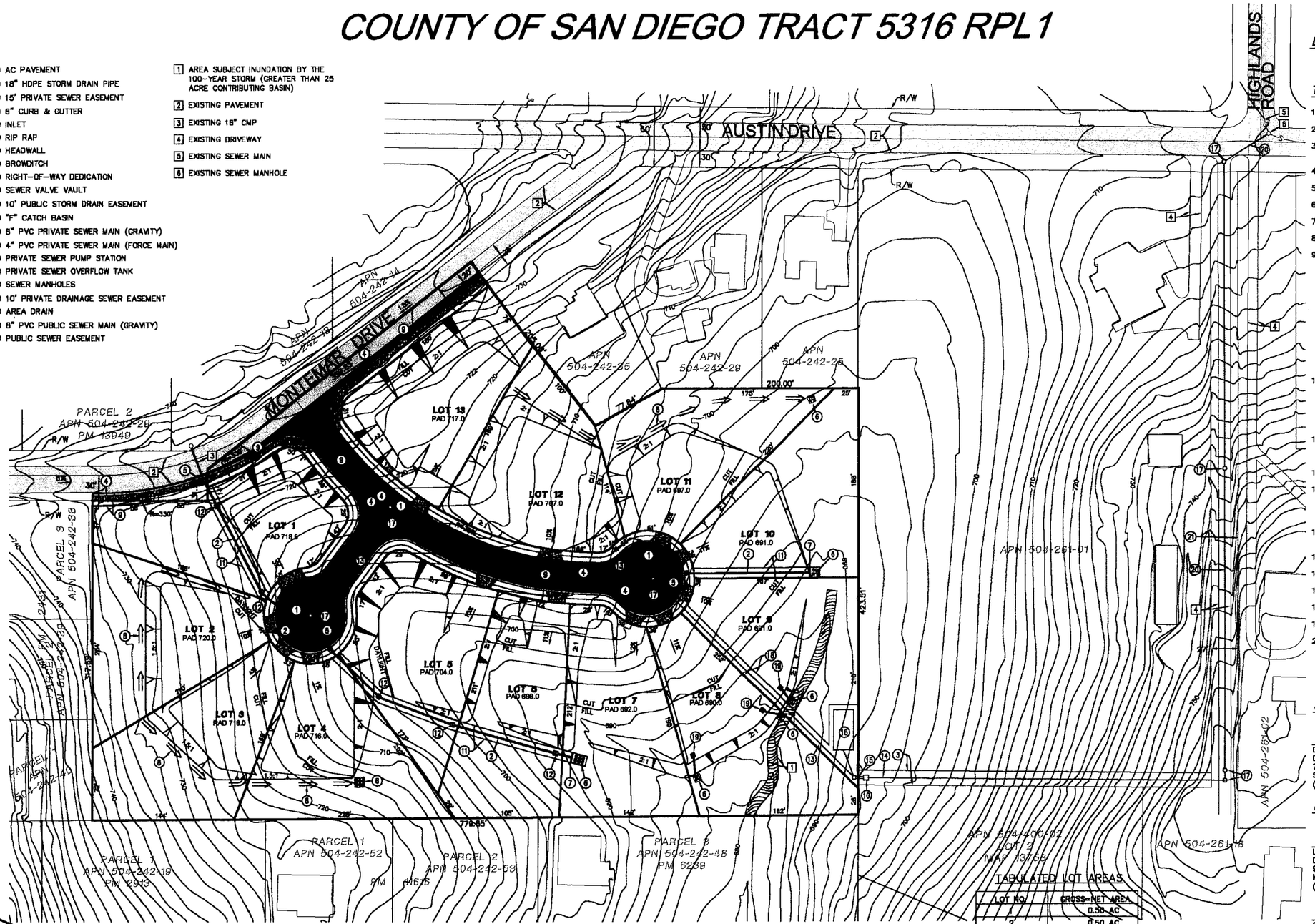
ATTACHMENT "A"
LOCATION MAP

COUNTY OF SAN DIEGO TRACT 5316 RPL 1

LEGEND:

1. PROPOSED AC PAVEMENT
2. PROPOSED 18" HDPE STORM DRAIN PIPE
3. PROPOSED 15' PRIVATE SEWER EASEMENT
4. PROPOSED 6" CURB & GUTTER
5. PROPOSED INLET
6. PROPOSED RIP RAP
7. PROPOSED HEADWALL
8. PROPOSED BROWDITCH
9. PROPOSED RIGHT-OF-WAY DEDICATION
10. PROPOSED SEWER VALVE VAULT
11. PROPOSED 10' PUBLIC STORM DRAIN EASEMENT
12. PROPOSED "F" CATCH BASIN
13. PROPOSED 8" PVC PRIVATE SEWER MAIN (GRAVITY)
14. PROPOSED 4" PVC PRIVATE SEWER MAIN (FORCE MAIN)
15. PROPOSED PRIVATE SEWER PUMP STATION
16. PROPOSED PRIVATE SEWER OVERFLOW TANK
17. PROPOSED SEWER MANHOLES
18. PROPOSED 10' PRIVATE DRAINAGE SEWER EASEMENT
19. PROPOSED AREA DRAIN
20. PROPOSED 8" PVC PUBLIC SEWER MAIN (GRAVITY)
21. PROPOSED PUBLIC SEWER EASEMENT

1. AREA SUBJECT INUNDATION BY THE 100-YEAR STORM (GREATER THAN 25 ACRE CONTRIBUTING BASIN)
2. EXISTING PAVEMENT
3. EXISTING 18" CMP
4. EXISTING DRIVEWAY
5. EXISTING SEWER MAIN
6. EXISTING SEWER MANHOLE



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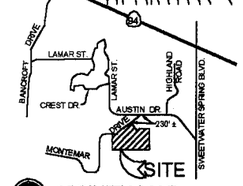
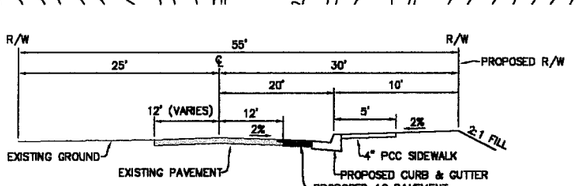
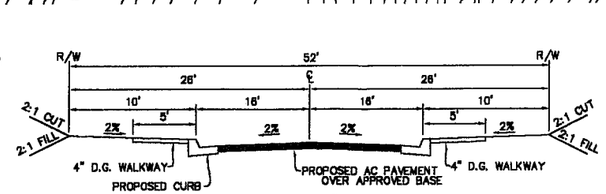


VICINITY MAP
NO SCALE
THOMAS BRO MAP NO. 1271, C-7



TYPICAL SECTION
MONTEMAR DRIVE
NO SCALE



TYPICAL SECTION
STREET "A" & "B" (PUBLIC ROADS)
NO SCALE

TABULATED LOT AREAS

LOT NO.	GROSS=NET AREA
1	0.50 AC
2	0.50 AC
3	0.50 AC
4	0.50 AC
5	0.50 AC
6	0.50 AC
7	0.50 AC
8	0.51 AC
9	0.50 AC
10	0.50 AC
11	0.50 AC
12	0.50 AC
13	0.50 AC
TOTAL	6.51 AC

LEGAL DESCRIPTION

PARCEL 4, PARCEL MAP 2431

TENTATIVE MAP NOTES

1. TAX ASSESSOR'S PARCEL NUMBER: 504-242-41
2. TAX RATE AREA: 83390
3. ACREAGE: TOTAL GROSS= 7.57 AC
   TOTAL NET= 6.51 AC
4. MINIMUM LOT SIZE: 0.5 AC NET
5. TOTAL NUMBER OF LOTS: 13
6. GENERAL PLAN REGIONAL CATEGORY: CUDA
7. GENERAL PLAN LAND USE DESIGNATION: RES 3
8. COMMUNITY PLAN: SPRING VALLEY
9. EXISTING & PROPOSED ZONING:

ZONE	RR2
USE REGULATIONS	J
ANIMAL REGULATIONS	2
DENSITY	0.5 AC
LOT SIZE	C
BUILDING TYPE	---
MAXIMUM FLOOR AREA	---
FLOOR AREA RATIO	G
HEIGHT	---
LOT COVERAGE	G
SETBACK	---
OPEN SPACE	---
SPECIAL AREA REGULATIONS	

10. DISTRICTS:
    SEWER: SPRING VALLEY SANITATION DISTRICT
    WATER: HELIX WATER DISTRICT
    FIRE: SAN MIGUEL FIRE PROTECTION DISTRICT
    SCHOOLS: LA MESA-SPRING VALLEY SCHOOL DISTRICT
    GROSSMONT UNION HIGH SCHOOL
11. PARK LAND DEDICATION STATEMENT: DEVELOPER PROPOSES TO PAY FEES IN LIEU OF DEDICATION.
12. STREET LIGHTS WILL BE PER COUNTY STANDARDS.
13. SOLAR ACCESS STATEMENT: THIS SOLAR SUBDIVISION AS REQUIRED BY SECTION 81.401 (N) OF THE SUBDIVISION ORDINANCE. ALL LOTS HAVE AT LEAST 100 SQ. FT. OF UNOBSTRUCTED ACCESS TO SUNLIGHT ON THE BUILDABLE PORTION OF LOT.
14. TOPOGRAPHIC SOURCE: AERIAL SURVEY FLOWN: NOVEMBER 2, 1992
    BY: JESS L. McMARTIN
15. GRADING: SEE PRELIMINARY GRADING PLAN
16. ASSOCIATED PERMITS: NONE
17. PROJECT AVERAGE SLOPE: 11.3%
18. PERCENT OF TOTAL SITE GRADED: 73%
19. STREET NAMES SECTION APPROVAL: NONE
20. SPECIAL ASSESSMENT ACT PROCEDINGS STATEMENT: NONE

SUBDIVIDER:

DUANE BETTY — DATE
DISTINCTIVE HOMES
707 BROADWAY SUITE 1150
SAN DIEGO, CA 92101
(619) 881-0001

OWNERS:

LEWIS A. EDWARDS JR., TRUSTEE — DATE
DECLARATION OF TRUST DATED 6-10-91
928 MAIN STREET
MARTINEZ, CA 94553
(619) 881-0001

CHIYOKO EDWARDS — DATE
928 MAIN STREET
MARTINEZ, CA 94553
(619) 881-0001

TENTATIVE MAP PREPARED BY:

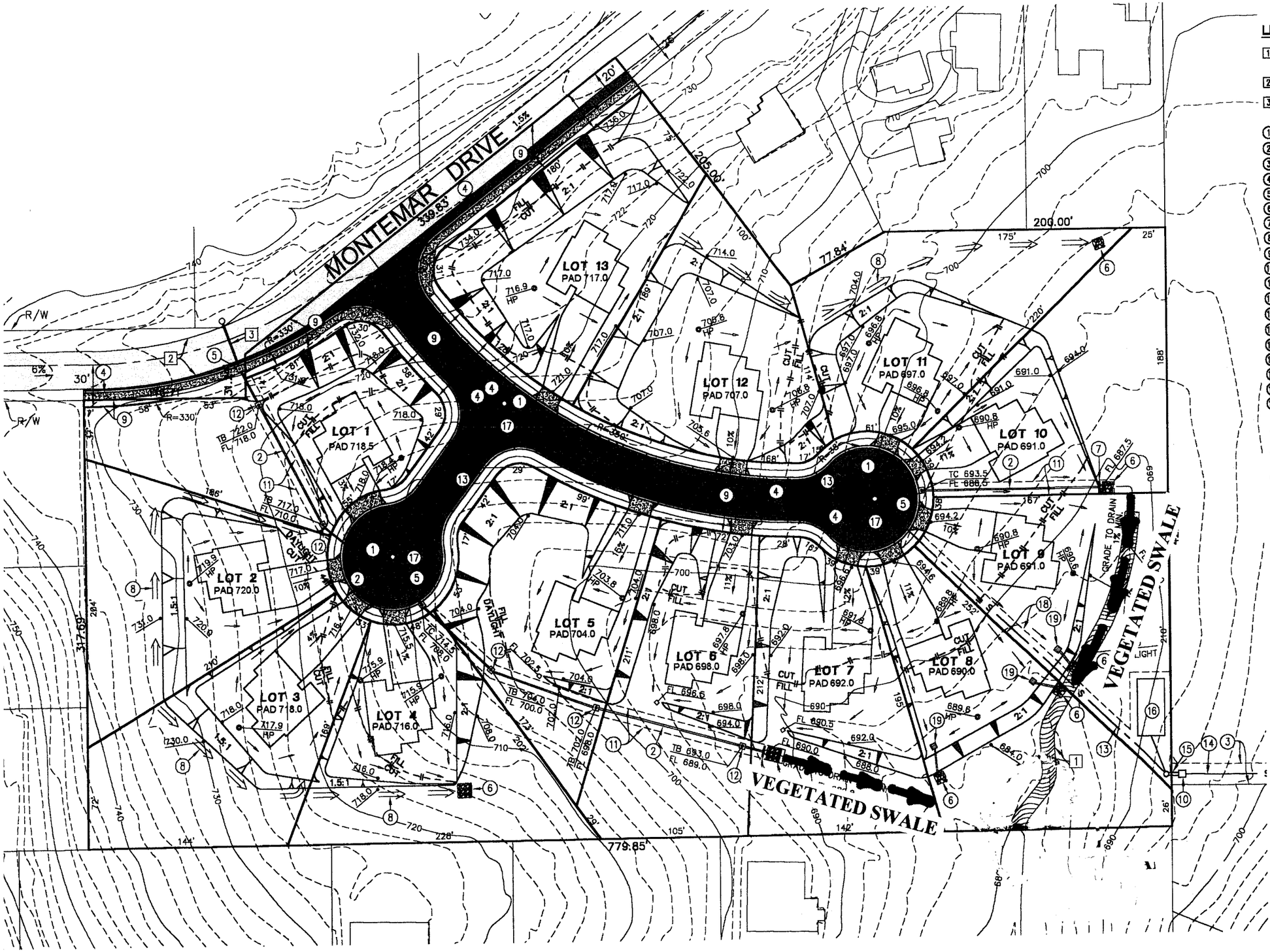
REGISTERED PROFESSIONAL ENGINEER — LAWRENCE W. WALSH — 46316 — EXP. 12-31-06 — CIVIL — STATE OF CALIFORNIA

LAWRENCE W. WALSH — RCE 46316 — DATE

Walsh Engineering & Surveying, Inc.
1076 Broadway, Suite B, El Cajon, Ca. 92021
(619) 588-8747 (619) 588-8477 Fax

ATTACHMENT "B"
PROJECT MAP

L:\Projects\02329\dwg\02329-BASE.dwg 10/31/03 08:38:59 AM PST



LEGEND:

1. AREA SUBJECT INUNDATION BY THE 100-YEAR STORM DRAIN (GREATER THAN 25 ACRE CONTRIBUTING BASIN)
2. EXISTING PAVEMENT
3. EXISTING 18" CMP

1. PROPOSED AC PAVEMENT
2. PROPOSED 18" HDPE STORM DRAIN PIPE
3. PROPOSED 15' PRIVATE SEWER EASEMENT
4. PROPOSED 6" CURB & GUTTER
5. PROPOSED INLET
6. PROPOSED RIP RAP
7. PROPOSED HEADWALL
8. PROPOSED BROWDITCH
9. PROPOSED RIGHT-OF-WAY DEDICATION
10. PROPOSED SEWER VALVE VAULT
11. PROPOSED 10' PUBLIC STORM DRAIN EASEMENT
12. PROPOSED "F" CATCH BASIN
13. PROPOSED 8" PVC PRIVATE SEWER MAIN (GRAVITY)
14. PROPOSED 4" PVC PRIVATE SEWER MAIN (FORCE MAIN)
15. PROPOSED PRIVATE SEWER PUMP STATION
16. PROPOSED PRIVATE SEWER OVERFLOW TANK
17. PROPOSED SEWER MANHOLES
18. PROPOSED 10' PRIVATE DRAINAGE SEWER EASEMENT
19. PROPOSED AREA DRAIN

694.0 TOP OR TOE OF SLOPE ELEVATION

690.8 HP PAD DRAINAGE SPOT ELEVATION (HIGH POINT)

FL 690.5 PAD DRAINAGE SPOT ELEVATION (FLOW LINE)

NOTE:

THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.

GRADING:

CUT= 15,100 C.Y.
FILL= 15,700 C.Y.
IMPORT= 600 C.Y.
* ASSUMED 15% SHRINKAGE
QUANTITIES SUBJECT TO FORTHCOMING GEOTECHNICAL INVESTIGATION

SOURCE OF TOPOGRAPHY:

AERIAL SURVEY FLOWN: NOVEMBER 2, 1992
BY: JESS L. McMARTIN

ASSESSOR'S PARCEL NUMBER:

504-242-41

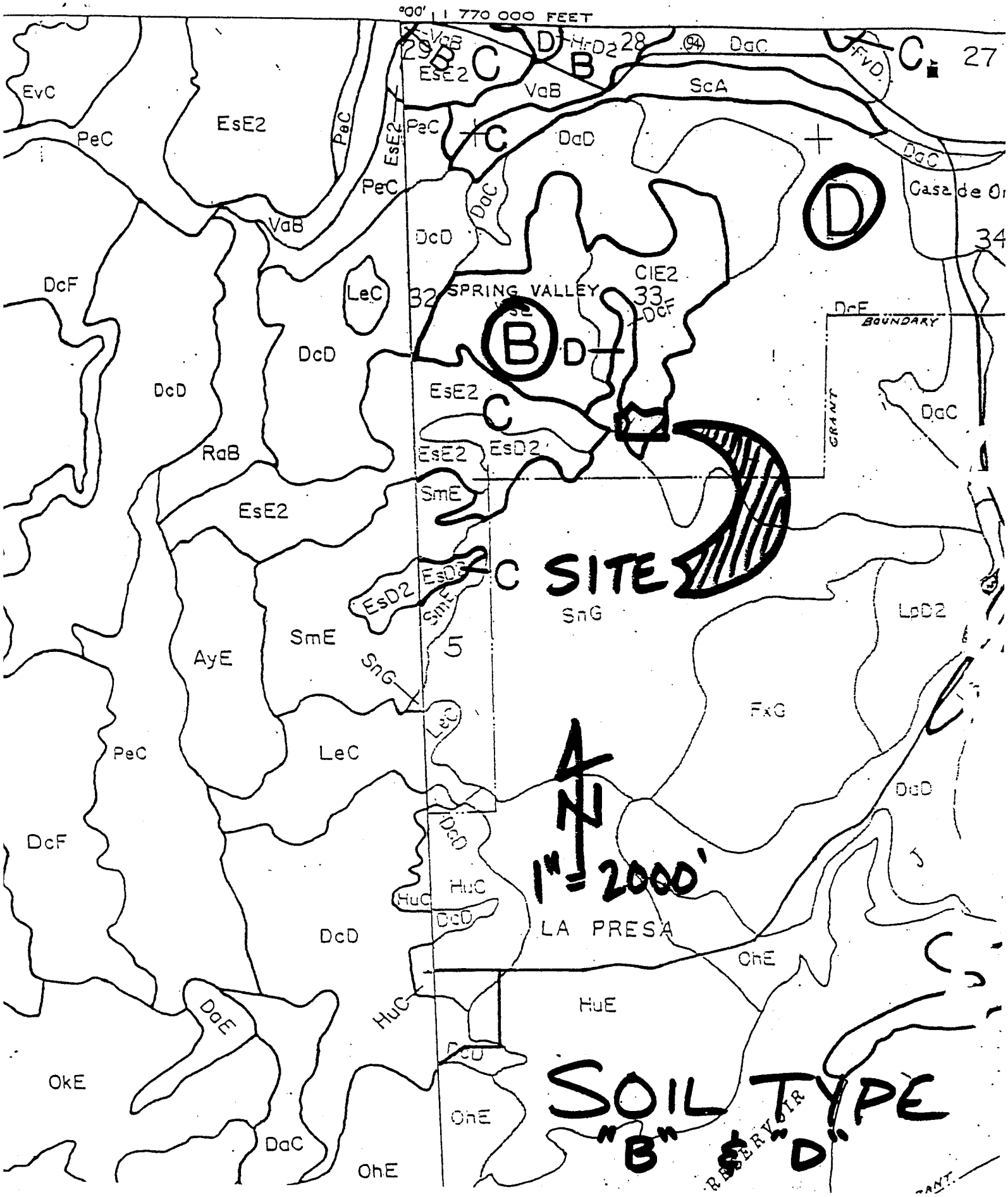
SUBDIVIDER:

DUANE BETTY
DISTINCTIVE HOMES
707 BROADWAY SUITE 1150
SAN DIEGO, CA 92101
(619) 881-0001

OWNERS:

LEWIS A. EDWARDS JR., TRUSTEE
DECLARATION OF TRUST DATED 6-10-81
928 MAIN STREET
MARTINEZ, CA 94553
(619) 881-0001

ATTACHMENT "C"
POST-CONSTRUCTION BMP PLAN



ATTACHMENT "D"
SOIL GROUP MAP

PROTECTIVE DEVICES	INSPECT FOR:	MAINTENANCE MEASURES
Riprap-lined waterway	· Scour under riprap	· Check construction. Install adequate protection.
Silt fence	· Undercutting of fence · Fence collapsing · Torn fabric · Runoff draining around barrier · Sediment level near top of fence	· Fill undercut and re-compact. · Replace section. · Replace torn fabric. · Extend fence and/or regrade to prevent. · Remove sediment, dispose of properly.
Check dam	· Sediment accumulation · Flow escaping around sides of check dam · Displacement of sandbag, stones or straw bales	· Remove sediment, dispose of properly. · Check construction, repair/restore as necessary. · Reconstruct per plan.
Inlet protection	· Flooding around or below inlet · Undercutting of bales or silt fence, bale displacement, torn fabric, etc.	· Check grading/construction, check for clogging, restore for positive drainage into inlet. · Fill undercut and re-compact.
Outlet protection	· Dislodged stones · Erosion below outlet · Outlet scour	· Restore erosion protection per plan. · Check construction. Repair accordingly. · Check construction. Repair accordingly.
Vegetation	· Rills or gullies forming · Bare soil patches · Sediment at toe of slope	· Inspect for adequate stand of vegetation, reseed. · Reseed bare areas. · Identify sediment source, control at source.
Dikes	· Gully on slope below dike · breach; low spot in dike · Loose soil · Erosion of dike face	· Fill gully or low spot, re-compact. · Remove and re-compact. · Install adequate protection.
Swales	· Gully on slope below swale · Water ponded in swale · Sediment or debris in channel · Erosion of unlined channel surface · Erosion of channel lining	· Fill gully, restore positive drainage. · Properly grade to provide positive drainage and prevent ponding. · Identify source of sediment or debris, install control measures at source. Remove sediment and debris from channel. · Install erosion protection. · Check construction. Install adequate protection.
Pipe slope drain or chute	· Blocked inlet or outlet · Runoff bypassing inlet · Erosion at outlet	· Remove blockage. · Check construction, check for clogging, check grade for positive drainage into inlet. · Check construction. Install adequate protection.
Grassed waterways	· Bare areas · Tall growth	· Re-vegetate bare areas. · Restore channel conditions per plan.

ATTACHMENT "E"

RMP MAINTENANCE INDICATOR

Stormwater Management Plan Instructions: To Accompany All Grading Permit Applications

In order to comply with the federal Clean Water Act, the state Water Code and County Ordinances, the County of San Diego requires that property owners complete a Stormwater Management Plan prior to issuance of any Grading Permit. The purpose of a Stormwater Management Plan is to document Best Management Practices (BMPs) that will be implemented to prevent pollutants (including sediment) from entering stormwater conveyances and receiving waters. The Stormwater Management Plan becomes a part of the Grading Permit and is subject to enforcement by County inspectors and others.

Stormwater Management Plans include the elements described in the following sections:

Section 1: Required Information - This section is used to provide the County with basic information necessary to evaluate and prioritize project activities. Each of the items in this section must be completed, except projects with less than 5 acres of disturbed area are not required to have a Waste Discharge Identification Number (WDID). Grading projects with a disturbed area of greater than 5 acres must also meet additional requirements from the State Water Resources Control Board (SWRCB). Those additional requirements include filing a Notice of Intent (NOI) and preparation of a Stormwater Pollution Prevention Plan (SWPPP).

Please note that watercourses and waterbodies include ephemeral drainages (i.e., those that are dry during part of the year).

Section 2: Best Management Practices - Best Management Practices (BMPs) must be selected and implemented to prevent erosion and construction-related materials, sediment, wastes and spills from entering stormwater conveyances and receiving waters.

Note: It is the responsibility of the property owner and the contractor to determine the types of BMPs that will be used, as well as the levels of application necessary to comply with the County's Stormwater and Grading Ordinances. Failure to prevent soil erosion and discharges of sediment and other pollutants from construction sites is subject to enforcement by the County or others. At a minimum, the County requires that the BMPs listed in Table A (attached) be installed and maintained for all grading projects. Additional BMPs listed in Table B (attached) may also be required in correlation to a project's scope, potential for discharges and proximity to a watercourse or other receiving waters.

Section 3: Certification – The property owner must sign this section certifying that they understand the County's minimum requirements for stormwater management of construction activities and will implement, monitor and maintain the selected BMPs to ensure their effectiveness.

A County BMP manual can be found at the DPW and DPLU Permit Counters. The Manual includes all of the referenced BMPs listed in Tables A and B and from the *Caltrans Storm Water Quality Handbooks* and *California Stormwater BMP Handbook for Construction.* The entire manuals may also be ordered directly from the following sources:

Caltrans Manuals
Caltrans Publications unit
(916)445-3520
(916)324-8997 Fax

CA Stormwater BMP handbook
BPS Reprographic Services
1700 Jefferson St
Oakland, CA, 94612
(510)287-5485
(510)444-1262 Fax

LUEG:SW Revised 9/07/01 BC

ATTACHMENT F: BMP DATA SHEETS

ATTACHMENT "F"
BMP DATA SHEETS

County of San Diego
STORMWATER MANAGEMENT PLAN

This form must be submitted with all Grading Permit Applications.

SECTION 1. Required Information

Grading Permit Application Number:		Project Name: MONTEMAR ESTATES	
Name of Project Contact Person: DUANE BETTY		Project address or location: MONTEMAR DRIVE	
Title:	Phone #: (619) 881-0001		APN #: 504-242-41
Grading start date: ____	Grading finish date: ____	Project start date: ____	Project finish date: ____

Estimated amount of disturbed acreage: 4.5 acres (If equal to or greater than 5 acres, you must also provide a WDID number from the SWRCB.) **WDID** _____

Are there any watercourses or waterbodies within 50 feet of the limits of soil disturbance? YES____ NO X

Does the soil type have high erosion potential (fine grain soil like sand, silt, fine disintegrated granite) ? YES ____ NO X

Does the project site have or propose slopes higher than 25 feet or steeper than 1:1? YES ____ NO X

SECTION 2. Best Management Practices

Best Management Practices

The goal of stormwater management planning is to reduce pollution to the maximum extent practicable by implementing Best Management Practices (BMPs). There are five categories of BMPs: 1) Erosion control practices, and; 2) Velocity reduction, and; 3) Sediment control practices, and; 4) Offsite sediment tracking control, and; 5) General site and materials management. BMPs from each of the five categories must be used together as a system in order to prevent erosion, sediment, wastes, spills, and residues from leaving the site. When properly implemented, monitored and maintained, BMPs will function to prevent pollutants (including sediment) from leaving the site. It is the responsibility of the property owner and the contractor to determine the types of BMPs that will be used, as well as the levels of application necessary to comply with the County's Stormwater and Grading Ordinances.

Best Management Practice Tables

Tables A and B (attached) must be used to indicate those BMPs that will be used to prevent stormwater pollution. At a minimum, the County requires that the BMPs listed in Table A be installed on all grading projects. However, some BMPs may not be applicable to every project. For example, if storm drain inlets are not present, then Storm Drain Inlet Protection (BMP SC10) would not be applicable.

Grading Plan Best Management Practice Checklist

The following information shall be shown on the grading plans:

- ☐ The project boundaries.
- ☐ The footprint of any existing structures and facilities.
- ☐ The footprint of all structures and facilities to be constructed.
- ☐ The limits of grading.
- ☐ The existing and proposed grades of the site, along with any intermediate grades that will significantly affect site drainage patterns.
- ☐ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving waters.

Please note that each of the items identified by a star (★) in Tables A and B must be included on the grading plans, and labeled with the designation found in the tables (for example, SS-7).

SECTION 3. Certification

The following certification must be signed before a Grading Permit will be issued.

I have read and understand that the County of San Diego has adopted minimum requirements for stormwater management of construction activities. I certify that the BMPs I have selected in Tables A and B will be implemented to effectively minimize the potentially negative impacts of this project's construction activities on stormwater quality. I further agree to install, monitor, maintain or revise the selected BMPs to ensure their effectiveness.

I also understand that non-compliance with the County's Stormwater and Grading Ordinances may result in enforcement by the County, including fines, citations, stop-work orders, cease and desist orders or other actions.

Property owner _____ *Date* _____

TABLE A: MINIMUM REQUIRED CONSTRUCTION BMPs

Minimum Required Best Management Practices	(★) If used, these BMPs must be shown on the grading plan.	CALTRANS Stormwater Quality Handbooks (Nov '01)	California Storm-water BMP Handbook for Construction	Will BMP Be Used? Yes	Will BMP Be Used? No	If No, State Reason
1. A. Erosion Control - Slopes	Must select one (more if needed)					
Vegetation Stabilization Planting (see note 1)	★	SS-2 SS-4	ESC10	X		
Hydraulic Stabilization Hydroseeding (see note 1)	★	SS-3 SS-4	ESC10	X		
Bonded Fiber Matrix (see note 2)	★	SS-4	ESC11	X		
Physical Stabilization Erosion Control Blanket(see note 2)	★	SS-7	ESC20	X		
1. B. Erosion Control - Flat Areas(< 5%)	Must select one (more if needed)					
Will use above Slope Control measures on flat areas also	★	SS-2,3,4,7	ESC10, 11,20	X		
Mulch, straw, wood chips, soil application	★	SS-6 SS-8	-	X		
2. Velocity Reduction	Must select one					
Energy Dissipater Outlet Protection (see note 3)	★	SS-10	ESC40	X		
3. Sediment Control	Must select one (more if needed)					
Silt Fence	★	SC-1	ESC50	X		
Straw Wattles	★	SC-5	-		X	
Gravel Bags	★	SC-6 SC-8	ESC52	X		
Storm Drain Inlet Protection	★	SC-10	ESC54	X		
Desilting Basin (not used on DPLU permits)	★	SC-2	-	X		
4. Offsite Sediment Tracking Control	Must select one (more if needed)					
Stabilized Construction Entrance	★	TC-1	ESC24	X		
Construction Road Stabilization	★	TC-2	ESC23		X	
Entrance / Exit Tire Wash	★	TC-3	ESC24		X	
Entrance / Exit Inspection & Cleaning Facility	★	-	-		X	
5. General Site Management	Must select appropriate BMP for each activity proposed					
Materials Management Material Delivery & Storage		WM-1	CA10	X		
Waste Management Concrete Waste Management		WM-8	CA23	X		
Solid Waste Management		WM-5	CA20	X		
Sanitary Waste Management		WM-9	CA24	X		
Hazardous Waste Management		WM-6	CA21	X		

Notes:

1. When Planting or Hydroseeding are selected for erosion control, the vegetative cover must be planted by August 15th and established by October 1st. If in the opinion of the County Official the vegetative cover is not established by October 1st, additional hydraulic or physical erosion control BMPs will be required.

2. These BMPs are temporary measures only when used without planting or hydroseeding. All slopes must have established vegetative cover prior to final grading approval.

3. Regional Standard Drawing D-40 - Rip Rap Energy Dissipater is also acceptable for velocity reduction.

4. Not all grading projects will have every waste identified. The applicant is responsible for identifying wastes that will be on-site and applying the appropriate BMP. For example, if concrete will be used, BMP WM-8 should be selected.

LUEG:SW Revised 9/07/01 BC

ATTACHMENT F

TABLE B: ADDITIONAL CONSTRUCTION BMPs

Additional Best Management Practices	(★) If used, these BMPs must be shown on the grading plan.	CALTRANS Stormwater Quality Handbooks	California Stormwater BMP Handbook for Construction	Will BMP Be Used? Yes	Will BMP Be Used? No	If No, State Reason
Erosion Control						
Site Development Considerations Scheduling		SS-1	ESC1			
Preservation of Existing Vegetation	★	SS-2	ESC2			
Other (submit description for approval)	★					
Vegetation Stabilization Vegetation Buffer Strips	★	SS-2	-			
Other (submit description for approval)	★					
Physical Stabilization Dust Control	★	WE-1	ESC21			
Soil Stabilizers	★	SS-5	-			
Other (submit description for approval)	★					
Diversion of Runoff Earthen Dikes	★	SS-9	ESC31			
Ditches and Berms	★	SS-9	-			
Slope Drains	★	SS-11	ESC32			
Temporary Drains & Swales	★	SS-9	ESC31			
Other (submit description for approval)	★					
Velocity Reduction						
Check Dams	★	SS-4	ESC41			
Slope Terracing	★	-	ESC42			
Other (submit description for approval)	★					
Sediment Control						
Brush or Rock Filter	★	-	ESC53			
Sediment Trap	★	SC-3	ESC55			
Sediment Basin	★	SC-2	ESC56			
Other (submit description for approval)	★					
General Site Management						
Employee & Subcontractor Training		-	CA40			
Materials Management Spill Prevention & Control		WM-4	CA12			
Other (submit description for approval)						
Waste Management Contaminated Soil Management		WM-7	CA22			
Other (submit description for approval)						
Vehicle and Equipment Management Vehicle & Equipment Cleaning		NS-8	CA30			
Vehicle & Equipment Fueling		NS-9	CA31			
Vehicle & Equipment Maintenance		NS-10	CA32			
Construction Practices Water Conservation		NS-1	-			
Structure Construction & Painting		-	CA3			
Paving Operations		NS-3	CA2			
Dewatering Operations		NS-2	CA1			
Other (submit description for approval)						

LUEG:SW Revised 9/07/01 BC

ATTACHMENT C

APPENDIX H Estimated O & M Costs for BMP Project

Estimated Values derived from Caltrans Pilot BMP Study. This spreadsheet will change as additional data becomes available.

BIOFILTER – STRIPS and SWALES						Labor			Equipment				Materials		Total	Comments
Preventive Maintenance and Routine Inspections						Per. Hrs	Rate	Cost	Type	Days	rate	Cost	Item	Cost	Cost	
ROUTINE ACTIONS	MAINTENANCE INDICATOR	FIELD MEASUREMENT	MEASUREMENT FREQUENCY	MAINTENANCE ACTIVITY	SITE-SPECIFIC REQUIREMENTS											
Height of vegetation	Average vegetation height exceeds 12 inches, emergence of trees, or woody vegetation	Visual inspection of vegetation throughout strip/swale	Once during wet season, once during dry season (depending on growth)	Cut vegetation to an average height of 6 inches	Remove any trees, or woody vegetation.	10	43.63	436.3	one-ton truck & hydroseeder	2	26.84	53.68	string trimmer, rake, fork, bags, safety equipment	50	539.98	
Assess adequate vegetative cover	Less than 90 percent coverage in strip inver/swale or less than 70 percent on swale side slope	Visual inspection of strip/swale. Prepare a site schematic to record location and distribution of barren or browning spots to be restored. File the schematic for assessment of persistent problems.	Assess quantity needed in May each year late wet season and late dry season.	Reseed/revegetate barren spots by Nov.		8	43.63	349.04	one-ton truck & hydroseeder	1	48.15	48.15	seed	150	547.19	
				Scarify area to be restored, to a depth of 2-inches. Restore side slope coverage with hydroseed mixture.		0	43.63	0	one-ton truck & hydroseeder	0	26.84	0			0	
				If after 2 applications (2 seasons) of reseeding/revegetating and growth is unsuccessful both times, an erosion blanket or equivalent protection will be installed over eroding areas		0	43.63	0	one-ton truck & hydroseeder	0	26.84	0	blanket	0	0	
Inspect for accumulated sediment	Sediment at or near vegetation height, channeling of flow, inhibited flow due to change in slope.	Visual observation	Annually	Remove sediment. If flow is channeled, determine cause and take corrective action. If sediment becomes deep enough to change the flow gradient, remove sediment during dry season, characterize and properly dispose of sediment, and revegetate.		16	43.63	698.08	one-ton truck & hydroseeder	1	48.15	48.15	seed, testing and disposal of sediment	300	1046.23	once every five years
				Notify engineer to determine if regrading is necessary. If necessary, regrade to design specification and revegetate swale/strip. If regrading is necessary, the process should start in May. Revegetate strip/swale in Nov. Target completion prior to wet season.	None	2	43.63	87.26				0			87.26	
General Maintenance Inspection	Inlet structures, outlet structures, side slopes or other features damaged, significant erosion, emergence of trees, woody vegetation, fence damage, etc	Visual observation	Semi-Annually, late wet season and late dry season.	Corrective action prior to wet season. Consult engineer if an immediate solution is not evident	Remove any trees, or woody vegetation.	16	43.63	698.08	one-ton truck & hydroseeder	2	26.84	53.68			751.76	
TOTAL BIO FILTER AND SWALES						52		2268.76				203.66		500	2972.42	
Inspect for standing water	Water accumulation in spreader ditch	Standing water in spreader ditch	Within 72 hours after a storm event 0.75 inches or greater.	De-water the spreader ditch to a depth of less than 0.25 inches. If sediment impedes the de-watering activity, then move or remove that portion of the sediment. Characterize and properly dispose.		3	43.63	130.89	0	0	0	0			130.89	
				De-water the spreader ditch to a depth of less than 0.25" by removing the bypass plug and allowing the water to drain into the infiltration trench. Use care to prevent sediment from discharging into the infiltration trench. Replace the bypass plug once the de-watering has been completed		6	43.63	261.78	0	0	0	0			261.78	

ATTACHMENT "G"

ATTACHMENT "G"

ESTIMATED OPERATION and MAINTENANCE COSTS for BMP's

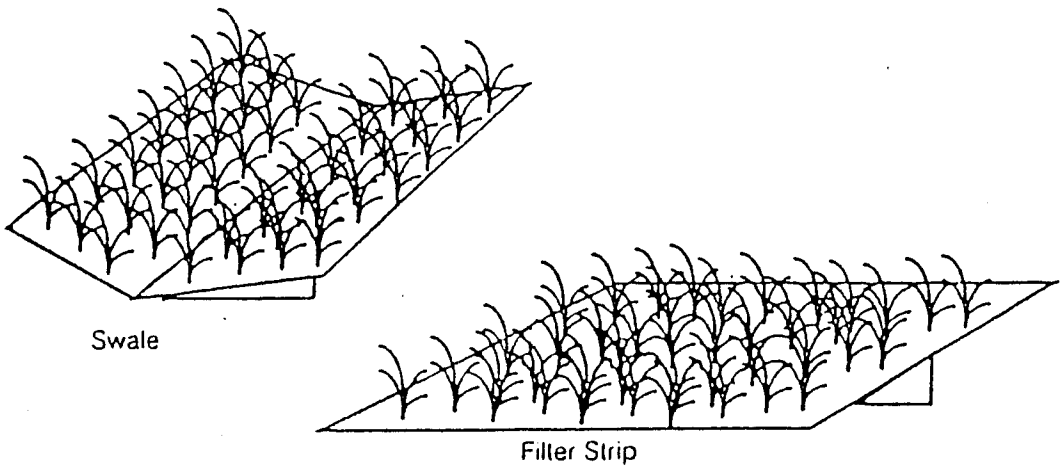


Figure 12.4—Swales and filter strips as controls: efficiency—moderate; function—slow runoff rate, some filtering and infiltration; maintenance-intensive (mowing); sidesloeps of swales must be kept flat.

ATTACHMENT "H"
BIO-FILTRATION AREA (typical section)

Enhanced Treatment Control BMP Selection Matrix

Pollutant of Concern	*Treatment Control BMP Categories*						
	Biofilters	Detention Basins	Infiltration Basins[2]	Wet Ponds or Wetlands	Drainage Inserts	Filtration	Continuous Flow Deflection Systems[3]
Sediment	M	H	H	H	M	H	M
Nutrients	L	M	M	M	M	M	L
Heavy Metals	M	M	M	H	M	H	L
Organic Compounds	U	U	U	U	L	M	L
Trash & Debris	L	H	U	U	M	H	M
Oxygen Demanding Substances	L	M	M	M	L	M	L
Bacteria	U	U	H	U	L	M	L
Oil & Grease	M	M	U	U	L	H	L
Pesticides	U	U	U	U	L	U	L

(1) The County will periodically assess the performance characteristics of many of these BMPs to update this table.

(2) Including trenches and porous pavement.

(3) Also known as hydrodynamic devices and baffle boxes.

L (Low): Low removal efficiency
M (Medium): Medium removal efficiency
H (High): High removal efficiency
U: Unknown removal efficiency, applicant must provide evidence supporting use

Sources: *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (1993), *National Stormwater Best Management Practices Database* (2001), and *Guide for BMP Selection in Urban Developed Areas* (2001).

ATTACHMENT "I"
ENHANCED TREATMENT CONTROL BMP SELECTION MATRIX